

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Atty. Docket

**CYRIL ALLOUCHE**

**FR010002**

Filed: **CONCURRENTLY**

**IMAGE PROCESSING METHOD OF FOLLOWING THE DEFORMATION OF AN  
ORGAN WHICH IS DEFORMABLE OVER TIME**

Commissioner for Patents, Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to calculation of the filing fee and examination,  
please amend the above-identified application as follows:

IN THE CLAIMS

Please amend the claims as follows:

3. An image processing method as claimed in Claim 1, wherein the expression of the deformation is defined in the complex plane.
5. An image processing method as claimed in Claim 3, wherein a corrective term which is a function of the radius and of the polar angle is introduced into the mathematical expression of the deformation, said corrective term including parameters determined a posteriori from the determination of the first mathematical expression from a set of marked points on the two images.
8. An image processing apparatus for implementing a method as claimed in Claim 3.
9. An image processing apparatus comprising means for iterating the method described for two images, successive or not, in Claim 1, on all the successive images in the image sequence.

11. An image processing apparatus as claimed in Claim 7, comprising means for defining a structure per unit length, means for applying the mathematical expression of the deformation to said structure per unit length and means for visualizing the deformation undergone by said structure per unit length.

14. An image capture and processing apparatus, said apparatus comprising means for acquiring a sequence of at least two images representing a representative surface of an organ or a part of an organ which is deformable over time and referred to as the organ surface, said surface including characteristic points, denoted marked points, which correspond to each other from one image to another in the sequence, means for visual representation of these images, an image processing apparatus as claimed in Claim 7.

REMARKS

The foregoing amendments to claims were made solely to avoid filing the claim in the multiple dependent form so as to avoid the additional filing fee.

The claims were not amended in order to address issues of patentability and Applicant respectfully reserves all rights he/she may have under the Doctrine of Equivalents. Applicant furthermore reserves her right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or continuing applications.

Respectfully submitted,

By

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## APPENDIX

3. An image processing method as claimed in one of Claims 1 and 2, characterized in that Claim 1, wherein the expression of the deformation is defined in the complex plane.

5. An image processing method as claimed in one of Claims 3 and 4, characterized in that Claim 3, wherein a corrective term which is a function of the radius and of the polar angle is introduced into the mathematical expression of the deformation, said corrective term including parameters determined a posteriori from the determination of the first mathematical expression from a set of marked points on the two images.

8. An image processing apparatus as claimed in Claim 7, for implementing a method as claimed in one of Claims 3 to 5 Claim 3.

9. An image processing apparatus as claimed in one of Claims 7 and 8, comprising means for iterating the method described for two images, successive or not, in Claim 1, on all the successive images in the image sequence.

11. An image processing apparatus as claimed in one of Claims 7 to 10 Claim 7, comprising means for defining a structure per unit length, means for applying the mathematical expression of the deformation to said structure per unit length and means for visualizing the deformation undergone by said structure per unit length.

14. An image capture and processing apparatus, said apparatus comprising means for acquiring a sequence of at least two images representing a representative surface of an organ or a part of an organ which is deformable over time and referred to as the organ surface, said surface including

characteristic points, denoted marked points, which correspond to each other from one image to another in the sequence, means for visual representation of these images, an image processing apparatus as claimed in ~~one of Claims 7 to~~  
13 Claim 7.